

REMARKS/ARGUMENTS

Claims 1-13 and 16-19 have been canceled. Claims 20-37 have been added. Claims 14-15 and 20-37 are pending.

The Examiner rejected claims 14 and 15 under 35 U.S.C. 103(a) as being unpatentable over Su et al. (US 6,828,251) in view of Wang et al. (US 6,040,619).

The Examiner stated that Su fails to explicitly disclose that the third etch plasma is more aggressive with respect to the etch stop than the first etch plasma composition but that it would be obvious to modify Su in view of Wang by increasing etch aggressiveness with respect to the etch stop because it will reduce etching time for the etch stop layer. Su and Wang do not make obvious the condition that the third etch plasma composition is more aggressive with respect to etch stop than the second etch plasma composition and the condition that the second etch plasma composition is more aggressive with respect to etch stop than the first etch plasma composition. The Examiner states as the motivation is that increasing etch aggressiveness with respect to etch stop will reduce etching time for the etch stop layer. Such a reason would not explain why the second etch is more aggressive than the first. In addition, this does not explain why three different etch chemistries are needed versus having a single etch using the most aggressive etch or just two different etches.

In addition, Su does not teach a three step etch process for etching an etch layer, but instead etches different layers, such as the DARC and the low-k dielectric layer. The Examiner further cites col. 4, line 55, to col. 5, line 5, of Wang as teaching aggressively etching the etch stop layer. So the Examiner uses a process for etching another layer, an etch stop layer, for teaching a third etch plasma composition. So Wang would teach etching another layer, the etch stop layer, not etching the etch layer using the first, second, and third plasma compositions. Thus Wang and Su teach etching three different layers using three different plasma compositions instead of teaching etching a feature in "an etch layer" using three different plasma compositions where successive plasma compositions are more aggressive with respect to etch stop, as recited in claim 14.

It should also be noted that the third etch plasma composition being more aggressive to etch stop does not mean that the third etch plasma composition more aggressively etches the etch stop layer, but page 9, lines 24-26, of the application states that "An aggressive etch with respect to etch stop has a recipe that, if applied to the entire duration of the process, would etch-stop at a greater depth than a recipe that is less aggressive etch with respect to etch stop." The Examiner failed to cite anything in Su or Wang that teaches that each plasma composition is more aggressive with respect to etch stop as defined in the application. For at least these reasons, claim 14 is not made obvious by Su in view of Wang.

Dependent claim 15 also patentably distinct from cited references for at least the same reasons as those recited above for independent claim 14, upon which it ultimately depends. Claim 15 recites additional limitations that further distinguish these dependent claims from the cited references. For example, claim 15 recites that the first etch plasma is more selective than the second etch plasma and the second etch plasma is more selective than the third etch plasma. The Examiner failed to specifically point out anything in Wang that teaches or suggests that the second etch plasma is more selective than the third etch plasma. The applicant's agent respectfully requests that the Examiner specifically point out where in Wang it teaches that each successive plasma combination is more selective than the previous for three steps etching an etch layer, as recited in claim 15. In addition, the Examiner failed to provide any motivation for using the teaching of Wang in Su to make the first etch plasma more selective than the second etch plasma. For at least these reasons, claim 15 is not anticipated or made obvious by the cited references.

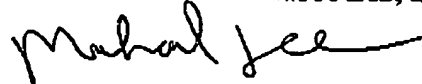
New claims 20-28 are ultimately dependent on claim 14 and in addition recite additional limitations.

New claims 29-37 have been added. They are similar to the original claims 1 and 13 and their dependent claims, which were cancelled in view of the previous final rejection to obtain allowable claims. New claims 29-37 recite a ramping up over at least 30% of the duration of the etch.

Applicants believe that all pending claims are allowable and respectfully request a Notice of Allowance for this application from the Examiner. Should the Examiner believe that a

telephone conference would expedite the prosecution of this application, the undersigned can be reached at telephone number (650) 961-8300.

Respectfully submitted,
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